

WHAT IS CLAIMED IS:

Art AT 1. A sign comprising a surface and an illuminated design coupled thereto, said illuminated design comprising:

5 a first electrode formed on said sign surface, said first electrode having a lead that extends to a perimeter of the surface of the sign;

a luminescent layer substantially aligned with said first electrode;

a conductor layer substantially aligned with said luminescent layer;

10 a second electrode formed onto said surface of said sign, said outlining electrode being configured to transport energy to said conductor layer;

an interconnect tab portion having a male end, and

a connector for releasably mating with said interconnect tab portion and for providing electrical power to said first electrode and said second electrode.

See B6 2. A sign in accordance with Claim 1 wherein said connector includes a locking pin for locking said connector to said surface of said sign.

3. A sign in accordance with Claim 1 wherein said connector includes a key pin for aligning the connector with the interconnect tab portion.

20 4. A sign in accordance with claim 3 wherein said connector includes contacts for the first and second electrode.

25 5. A sign in accordance with claim 4 wherein said connector includes a key positioned between said contacts for the first and second electrode such that said connector is mountable to said interconnect tab portion in a proper alignment.

6. A sign comprising a surface and an illuminated design coupled thereto,
said illuminated design comprising:

a first electrode formed on said sign surface, said first electrode defining a first
perimeter;

5 a dielectric layer screen printed onto said first electrode and sign surface, said
dielectric layer being substantially aligned with said first electrode and defining a
dielectric perimeter, the dielectric perimeter extending beyond the first perimeter of the
first electrode,

10 a phosphor layer formed on said dielectric layer and substantially aligned with
said first electrode, the phosphor layer defining a second perimeter, the dielectric layer
perimeter extending beyond the second perimeter of said phosphor layer to define an
exposed dielectric layer;

a sealing layer formed on at least a portion of said exposed dielectric layer to
electrically seal the dielectric layer;

15 a conductor layer substantially aligned with said phosphor layer and defining a
third perimeter;

an outlining electrode formed onto the sealing layer and substantially
circumscribing at least one of said second perimeter and third perimeter, said outlining
electrode being configured to transport energy to said conductor layer,

20 an interconnect tab portion having a male end, and

a connector for releasably mating with said interconnect tab portion and for
providing electrical power to said first electrode and said outlining electrode.

7. A sign in accordance with Claim 6 wherein said connector includes a
25 locking pin for locking said connector to said surface of said sign.

8. A sign in accordance with Claim 6 wherein said connector includes a key pin for aligning the connector with the interconnect tab portion.

9. A sign in accordance with claim 6 wherein said connector includes contacts for the first and second electrode.

10. A sign in accordance with claim 9 wherein said connector includes a key positioned between said contacts for the first and second electrode such that said connector is mountable to said interconnect tab portion in a proper alignment.

11. A sign in accordance with Claim 6 wherein said first electrode comprises a rear electrode, said rear electrode being screen printed on said substrate as a forward image.

12. A sign in accordance with Claim 6 wherein at least one of said first electrode and outlining electrode is comprised of silver particles.

13. A sign in accordance with Claim 12 wherein said dielectric layer is comprised of barium-titanate particles, and wherein said sealing layer comprises a barrier to prevent silver migration between said first electrode and said outlining electrode.